

IN THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims

Claims 1-16 (Canceled).

Claim 17. (currently amended) An energy market system associated with an energy generation and delivery system, the energy market system comprising:

a market user interface, the market user interface exchanging market information with a plurality of market participants;

an energy scheduling subsystem, the energy scheduling subsystem scheduling generation and delivery of energy among market participants in accordance with the market information and in accordance with information relating to the energy generation and delivery system, the energy scheduling subsystem further comprising a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and with a plurality of energy generation units selected as a result of an auction for operation, the scheduling of generation and delivery of energy based at least in part on the security analysis function.

Claim 18. (previously presented) The energy market system of claim 17, wherein the information relating to the energy generation and delivery system includes a model of the energy generation and delivery system.

Claim 19. (previously presented) The energy market system of claim 17, further comprising a unit commitment function that selects the plurality of energy generating units selected for operation.

Claim 20. (previously presented) The energy market system of claim 17, wherein the energy scheduling subsystem includes an energy pricing function, the energy pricing function determining locational prices for the energy to be delivered.

Claim 21. (currently amended) An energy market system associated with an energy generation and delivery system, the energy market system comprising:

a market user interface, the market user interface exchanging market information with a plurality of market participants;

a first database, the first database including market information entered by market participants regarding a plurality of generator bids and a plurality of load bids, the first database further including a model of a transmission network; and

an energy scheduling subsystem operably coupled to the first database, the energy scheduling subsystem scheduling generation and delivery of energy by a plurality of generators in accordance with the market information and in accordance with information relating to the energy generation and delivery system including the model and based upon a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions with energy generation units selected for operation by an auction.

Claim 22. (previously presented) The energy market system of claim 21, wherein the energy scheduling subsystem is operable to generate a first unit commitment based on market forecasted load and using transmission line limits based on the model.

Claim 23. (currently amended) The energy market system of claim 21, wherein the energy scheduling subsystem is operable to:

perform a security analysis procedure determining a set of violations resulting from simulation of at least one contingency case and the first unit commitment, and generating generate a second unit commitment different than the first unit commitment conditionally, said conditional generation based at least in part on the set of violations.

Claim 24. (currently amended) The energy market system of claim 21, wherein the energy scheduling subsystem includes:

a unit commitment function, the unit commitment function selecting energy generating units for operation in the energy generation and delivery system; ~~a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and with the energy generation units selected for operation;~~ and an optimal power flow function, the optimal power flow function determining a

configuration of the energy generation and delivery system so as to operate in a secure mode under each one of the contingency conditions.

Claim 25. (previously presented) The energy market system of claim 21, wherein the energy scheduling subsystem schedules generation and delivery of energy at least one of a day in advance and an hour in advance.

Claim 26. (previously presented) The energy market system of claim 21, wherein the market information includes demand for energy delivery and availability of energy generation.

Claim 27. (previously presented) The energy market system of claim 24, wherein the unit commitment function selects energy generating units for operation in each hour of a day in accordance with a study period that includes a plurality of days.

Claim 28. (previously presented) The energy market system of claim 24, wherein the energy scheduling subsystem includes an energy pricing function, the energy pricing function determining locational prices for the energy to be delivered.

Claim 29. (previously presented) The energy market system of claim 24, wherein an input to the optimal power flow function includes a ramping constraint of a power generation unit.

Claim 30. (currently amended) An energy market system associated with an energy

generation and delivery system, the energy market system comprising:

a market interface, the market interface exchanging market information with a plurality of market participants; and

an energy transmission rights auction subsystem, the energy transmission rights auction subsystem providing for the exchange of energy transmission rights in accordance with the market information and in accordance with information relating to the energy generation and delivery system, said energy transmission rights including a financial instrument providing an owner with a right to transfer a specific amount of power over a transmission path, wherein the energy transmission rights auction subsystem includes (i) a case setup function, the case setup function setting up a market case in accordance with the market information, and (ii) a feasibility test function including a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and in accordance with the market case.

Claim 31. (currently amended) The energy market system of claim 30, wherein the feasibility test function determines auction results in accordance with information relating to the energy generation and delivery system and the energy transmission rights auction subsystem includes:

~~a case setup function, the case setup function setting up a market case in accordance with the market information;~~

~~a feasibility test function, the feasibility test function testing the feasibility of the market case and determining auction results in accordance with information relating to the energy generation and delivery system; and~~

a post-processing function, the post-processing function providing the auction results to the market participants.

Claim 32. (currently amended) The energy market system of claim 31, wherein the feasibility test function includes:

~~a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and in accordance with the market case;~~

an optimal power flow function, the optimal power flow function determining a configuration of the energy generation and delivery system so as to operate in a secure mode under each one of the contingency conditions and in the absence of a contingency condition; and

an energy rights pricing function, the energy rights pricing function determining prices for the energy transmission rights to be exchanged in accordance with the auction results.

Claim 33. (previously presented) The energy market system of claim 30, wherein the market interface exchanges market information with a plurality of market participants over a data communications network.

Claim 34. (previously presented) The energy market system of claim 30, wherein the information relating to the energy generation and delivery system includes a model of the energy generation and delivery system.

Claim 35. (previously presented) The energy market system of claim 30, wherein the energy transmission rights include fixed transmission rights.

Claim 36. (previously presented) The energy market system of claim 32, wherein the optimal power flow function includes a security-constrained optimal power flow function.